REMARKS

This is a response to the Final Office Action mailed on November 2, 2009 and to the Advisory Action mailed on January 11, 2010. The Amendment offered in this response is in fact identical to Applicant's Amendment Under 37 C.F.R. § 1.116 filed on January 4, 2010, except that the deletion of the comma on line 11 of claim 1 has been corrected in accordance with the Notice of Non-Compliant Amendment mailed with the Advisory Action. Applicant has reviewed the claim amendments and believes that this was the only error.

Claims 1-4 and 6-14 are presented for examination. Claim 5 is hereby cancelled without prejudice. Claims 1, 2, 4, 6, and 7 have been amended. No new matter has been added by these amendments.

Applicant submits that this Amendment After Final Rejection places the application in condition for allowance. These amendments are necessary because of issues raised in the Office action and were not presented earlier because Applicant believed that the prior response placed the application in condition for allowance, for at least the reasons stated in that response.

Claim Rejections Under 35 U.S.C. § 112

Claims 1-14 were rejected as indefinite due to confusing antecedent basis for "the collapsing process." Applicant submits that the amendment substituting the recitation "etching-and-collapsing process" for "etching and collapsing process" in various claims clarifies the antecedent basis and obviates the indefiniteness rejections under Section 112. Applicant therefore respectfully requests that the corresponding rejections be withdrawn.

Claims 1-14 were also rejected under Section 112 as failing to comply with the written description requirement. Specifically, at page 3 of the Office action, the Examiner states that he

> could find no support for the [limitation] that the inner [diameter] is "within the range of 2 to 4 mm after the collapsing process of claim 1, lines 11-12—especially in combination with the claim 5 limitation that indicates the diameter is 2-4 mm as a result of the "etching and collapsing process."

In response, Applicant has cancelled claim 5 and amended claim 1 to clarify that the inner diameter range limitation applies after the *etching-and-collapsing* process. Support for this amendment may be found, for example, at page 12, lines 16-18 of the international

publication. Applicant submits that these amendments obviate the rejections based on the written description requirement and respectfully requests that these rejections be withdrawn.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-3, 5, 6, 8, 11, 13, and 14 were rejected as obvious over Pluijms (US 4,793,843) in view of French (US 4,154,591). Applicants respectfully disagree.

A finding of obviousness requires that "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. §103(a). In *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007), the Supreme Court stated that the following factors set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) still control an obviousness inquiry: (1) the scope and content of the prior art; (2) the differences between the prior art and the claimed invention; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *KSR*, 127 S.Ct. at 1734, 82 USPQ2d at 1388 quoting *Graham*, 383 U.S. at 17-18, 14 USPQ at 467.

The *KSR* Court rejected a rigid application of the "teaching, suggestion, or motivation [TSM]" test previously applied by the Court of Appeals for the Federal Circuit. *KSR*, 127 S. Ct. at 1739 USPQ2d at 1395. However, the Supreme Court affirmed that it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does...because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR*, 127 S.Ct. at 1741, 82 USPQ2d at 1396. Once the *Graham* factors have been addressed, the Examiner may apply the TSM test, asking whether (1) a teaching, suggestion or motivation exists in the prior art to combine the references cited, and (2) one skilled in the art would have a reasonable expectation of success. *See* USPTO Guidelines at 57534.

Further, in order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Additionally, in considering a prior art reference, the reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

Moreover, it is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Indeed, "an applicant may rebut a prima facie case of obviousness by showing that the prior art teaches away from the claimed invention *in any material respect.*" *In re Peterson*, 315 F.3d 1325, 1331 (Fed. Cir. 2003). (Emphasis added.)

As a preliminary matter, note that claim 5 has been cancelled. The rejection of this claim is therefore moot and should be withdrawn.

Claim 1, as amended, recites:

> 1. A method for manufacturing an optical fiber preform by MCVD comprising:
> a depositing process for forming clad and core deposition layers on an inner wall of a quartz tube;
> a collapsing process for collapsing the quartz tube on which the deposition layers are formed by heating the quartz tube to a temperature higher than a softening temperature of the deposition layers;
> an etching-and-collapsing process for etching and collapsing the quartz tube at the same time by injecting an reaction gas for etching into the quartz tube together with heating the tube at a temperature higher than the softening temperature *such that the tube has an inner diameter within the range of 2 to 4 mm just after the etching-and-collapsing process and just before a following closing process*; and
> a closing process for forming an optical fiber preform without a hollow portion by heating the quartz tube to a temperature higher than the softening temperature after the etching-and-collapsing process,
> whereby an index dip occurring at a center of the optical fiber preform core is decreased or eliminated.

(Emphasis added.)

The Examiner admits on page 5 of the Office action that Pluijms does not disclose the 2-4 mm limitation of claim 1, and for this relies on Fig. 1 of French which shows a tapering tube. The Examiner argues that "inherently, at some location the diameter of the taper [of French] is within the 2-4 mm range." However, for the doctrine of inherency to apply, the teaching of the prior art reference must *inevitably* lead to the result. *In re Oelrich*, 666 F.578, 581. Here, far from leading inevitably to a 2-4 mm inner diameter "just after the etching-and-collapsing process and just before a following closing process," French Fig. 1 and its

description fails to disclose the inner diameter just after etching-and-collapsing and just before closing, and indeed contains no quantitative teaching about inner diameter at all.

Because neither of the cited references, alone or in combination, teach or suggest what is recited in claim 1, claim 1 is patentable over these references and the rejection of claim 1 under Section 103 should be withdrawn. Because claims 2-4 and 6-14 are dependent claims dependent on claim 1, the rejections of these claims should also be withdrawn, for at least this reason.

Claims 1-3, 5, 6, 8, 11, 13, and 14 were also rejected over the combination of Schneider (US 4,557,561) and Wisk (US 6,220,060).

Again, (page 6 of the Office action), the Examiner admits that the first-cited reference, Schneider fails to disclose the inner diameter limitation, and relies for this limitation on Wisk. The basis for the supposed disclosure in Wisk is the statement at col. 3 ll. 62-63 that "bubbles are likely to occur when the substrate tube opening is less than 1.5-2.5 mm diameter." However, an observation about the conditions for bubble formation does not constitute a teaching or suggestion of "an etching-and-collapsing process for etching and collapsing the quartz tube at the same time by injecting an reaction gas for etching into the quartz tube together with heating the tube at a temperature higher than the softening temperature such that the tube has an inner diameter within the range of 2 to 4 mm just after the etching-and-collapsing process and just before a following closing process" as recited in claim 1.

Because the combination of Schneider and Wisk fails to disclose or teach this limitation, claim 1 is patentable over this combination and the rejection of claim 1 should be withdrawn. Because claims 2-4 and 6-14 are dependent claims depending from claim 1, the rejections of these claims should also be withdrawn, for at least this reason.

Conclusion

In view of the above, applicants respectfully submit that the present application is in condition for allowance. A favorable disposition to that effect is respectfully requested.

No fees are believed to be due with this submission, except for the RCE fee noted on the RCE Transmittal filed herewith. Please charge any fee that may be due or credit any overpayment to Jones Day Deposit Account No. 50-3013.

Should the Examiner have any questions or comments concerning this submission, he is invited to call the undersigned at the phone number listed below.

Further, Applicant requests an interview with the Examiner to discuss the invention and the amended claims.

Respectfully submitted,

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Lawrence R. Gabuzda (Reg. No. 51,711)
JONES DAY
222 East 41st Street
New York, New York 10017
(212) 326-3939